DOCUMENT RESUME

ED 074 711 EM 010 844

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TITLE	Changes in Self-Esteem as a Result of an Individualized Curriculum. Preliminary Report.
INSTITUTION	Aurora (East) Public School District, Ill.
SPONS AGENCY	Westinghouse Learning Corp., New York, N.Y.
PUB DATE	72
NOTE	[illegible]p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Elementary Grades; *Individualized Curriculum; *Individualized Instruction; *Minority Groups; Self Concept Tests; *Self Esteem
IDENTIFIERS	PLAN; *Program for Learning in Accordance with Needs

ABSTRACT

Preliminary results give strong indication that six months with an individualized instruction curriculum (Westinghouse Learning Corporation's PLAN) greatly increase self-esteem among elementary-school children. Children from a working class, ethnically mixed school, whose self-esteem was lower in October than children from control schools (The control students also had higher IQ and achievement levels), had greater self-esteem in May than did the children from the control schools. While more detailed analysis will be needed to determine effects on achievement, such striking effects on self-esteem in a population with heavy minority representation are already considered to be of major importance. (RH)

1970-1971

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PRELIMINARY REPORT

CHANGES IN SELF-ESTEEM AS A RESULT OF AN INDIVIDUALIZED CURRICULUM

..... by Marvin M. Powell, Ph.D.

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In September of 1970, the East Aurora School district put the Westinghouse Learning Corporation's PLAN operation into an entire elementary school, grades one through six, and in the seventh grades in both junior high schools in the district. The elementary school selected, Brady School, draws from a generally low socio-economic neighborhood. About twenty-five percent of the school's population is black, about twenty-five percent are Spanish-American, and most of the remaining fifty-five percent are from low-income and blue collar workers' homes.

Two control schools were selected, but neither was truly a control school. The average IQ in both of these schools was somewhat higher than that of Brady, as was the achievement level. However, they were the best controls available and were used.

This investigator became aware of the program in early October of 1970 and immediately requested the school district to administer the Coopersmith Self-Esteem Inventory to the students in the experimental and the control schools. The SEI is described in detail in the Coopersmith book, Antecedents of Self-Esteem (W. H. Freeman Co., 1967). The book and the instrument were reviewed most favorably by Robert Sears (Contemporary Psychology, March 1969). This investigator had used the instrument previously and had been impressed with its sensitivity. There was some concern about employing it at first, second, and third grade levels, but the results demonstrated that this concern was not valid.

The results presented here are those on the October 1970 and the mid-May 1971 administrations of the SEI. A copy of the achievement test's results are attached but the statistical treatment of this latter data is not yet complete. It will, however, involve an analysis of covariance. Covariance will also be applied to the SEI scores, but the results of the "t" tests are striking enough to present at

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this point.

Analysis

The pre-test (October 1970) results for the six grades at Brady School were compared by grade level with the pre-test results at Beaupre and at Johnson schools, as were the post-test results. The basic data for these analyses are presented in Talbe I, and the "t" tests derived from these data are presented in Tables II and III.

Inspection of Tables I and II reveals that the mean SEI scores were generally higher in both control schools than in the experiment schools (minus signs). At the fourth and fifth grade levels in the comparisons between Brady and Beaupre these differences were statistically significant (at the .05 level or better). In the comparison of Brady and Johnson school, the Johnson means were statistically significantly higher at the second grade level. Even where statistical significance was not evident, the means were generally higher in the control schools (8 of 12 compariosns).

The post-test results (May 1971) are appreciably different. In all twelve comparisons, the SEI means were higher for Brady school than for either control school. In the comparisons between Brady and Beaupre the first, second, and third grades at Brady were statistically significantly higher than those of Beaupre. In the Brady vs. Johnson comparison, the Brady means were statistically significantly higher in grades two and four.

It would appear from these results that the youngsters' response to the PLAN approach was definitely reflected in improved self-esteem. While this was obvious to most visitors to the school, it was confirmed by the above analyses.

The results presented in Table III offer further substantial evidence of the great change that occurred in the Brady youngsters. Table III presents the "t" test results of the pre-test - post-test comparison at each level with each school. It can be noted that the post-test means (see Table I) were higher at each grade

level in Brady school than the pre-test means. In grades one, two, three and five, these differences were highly statistically significant.

In the pre-test - post-test comparisons at Beaupre school the means for grades one, two, three, and six were lower on the post-test, with grades one, two, and three being statistically significantly lower. At Johnson school the post-test means were lower at five of the six grade levels, and statistically significantly lower at grades one and two. At the fourth grade level at Johnson the post-test scores were statistically significantly higher than the pre-test scores.

CONCLUSIONS

While further statistical analyses will be carried out particularly in relationship to achievement test results, the present investigator is convinced that the individualized approach of PLAN has been the major factor in the improved level of self-esteem evidenced in the students at Brady school. If improved self-esteem will, as expected, result in improved learning, these gains should have a major impact on the achievement in the second year of the program (1971-1972). Considering the population of students (the heavy minority group representation) at Brady school, the improvement of self-esteem by itself is of major importance.

TABLE II

"t" Test Results

Brady vs. Control Schools by Grade

Brady vs. Beaupre

Grade	Oct.	Grade	May
1	1.404	1	3.652*
2	0.012	2	2.693
3	-1.270	3	2.339*
4	-2.493	4	0.254
5	-2.540	5	1.144
6	-0.734	6	-0.509

Brady vs. Johnson

Grade	Oct.	Grade	May
1	-1.936	1	1.538
2	2.738	2	2.590
3	-2.135	3	0.414
4	-0.934	4	3.175*
5	0.641	5	1.749
6	-3.406	6	-0.009

*Significant at the .05 level or better

TABLE I

SELF-ESTEEM INVENTORY

		Oct. 1970				May 1972			
		ΣX	ΣX^2	$\bar{X}$	N	ΣX	ΣX^2	$\bar{X}$	N
BRADY	1	5,839	326,493	54.06	108	7,736	535,640	67.27	115
	2	5,149	307,865	57.85	89	6,131	439,317	68.89	89
	3	5,432	327,488	57.79	94	6,518	460,900	68.61	95
	4	5,335	324,357	57.37	93	5,544	342,000	59.61	93
	5	5,166	309,564	56.77	91	5,142	340,140	63.48	81
	6	5,858	361,792	58.97	99	5,930	384,548	61.77	96
BEAUPRE	1	2,422	130,596	51.53	47	2,690	167,724	59.78	45
	2	4,106	247,420	57.83	71	3,274	211,596	62.96	52
	3	4,808	301,288	60.10	80	4,882	325,604	64.24	76
	4	3,102	204,588	63.31	49	3,782	237,796	59.09	64
	5	3,726	240,340	62.70	60	2,424	153,556	60.60	40
	6	3,300	213,436	60.54	56	3,524	232,296	62.93	56
JOHNSON	1	3.040	180,616	57.36	53	3,676	244,016	64.49	57
	2	2,478	135,372	52.72	47	2,888	187,448	62.78	46
	3	2,566	166,764	62.58	41	2,570	180,468	67.63	38
	4	3,276	205,656	59.56	55	2,888	162,264	53.48	54
	5	2,372	139,688	55.16	43	2,302	142,852	59.03	39
	6	2,442	172,476	67.83	36	2,410	155,580	61.79	39

TABLE III

"t" Test Results

Post Test - Pre Test by Grade
within school

GRADES	BRADY	GRADES	BEAUPRE	GRADES	JOHNSON
1	9.332*	1	-3.347*	1	-3.450
2	6.016*	2	-2.501*	2	-4.494
3	6.336*	3	-2.081*	3	-1.749
4	1.248	4	1.581	4	2.449
5	3.407*	5	0.587	5	-1.254
6	1.455	6	-0.994	6	-0.994

*Significant at the level of .05 or better

RESPONSES TO THE PLAN TEACHER ATTITUDE SCALE (Spring 1972)

"Students have a better learning experience in PLAN than they have had previously"..."I prefer PLAN teaching to my previous method of teaching." ...these were among the overwhelmingly positive responses of 234 first-year PLAN teachers. These teachers from across the nation were respondents to the PLAN Teacher Attitude Scale developed for the Foundation for Individualized Evaluation and Research by Dr. Elda Wilson, Director of Special Education, Bradley University. The scale was item analyzed and factor analyzed after careful field testing resulting in a valid assessment of PLAN teachers' attitudes toward and perceptions of PLAN as implemented in their schools.

The first part of the scale focuses on teachers being "for or against" PLAN based on their perceptions of PLAN as a learning experience for children, a teaching experience, and PLAN as a vehicle for individualizing instruction. The second part of the scale has no direct bearing on being "for or against" PLAN, but rather provides information of a diagnostic nature to determine particular strengths, weaknesses, and implications for change in the implementation of the PLAN program.

Part I For or Against

The majority of teachers expressed the following opinions:

Teacher's Perceptions of Students in PLAN

- Students like school better and generally have a more positive attitude toward learning in PLAN.
- Students enjoy the freedom afforded them in PLAN and can handle this independence.
- PLAN students are better prepared to make decisions.
- Students in PLAN develop a better self-concept.

PLAN as a Teaching Experience

- I am able to deal more effectively with individual students in PLAN.
- I am able to use my professional skills and talents to best advantage in PLAN.
- I would not have attempted to totally individualize instruction without a tool such as PLAN.
- I do more counseling of individual children in PLAN than I have ever done before.

PLAN as an Individualized Learning Experience

- TLU's provide meaningful learning experiences for children.
- PLAN objectives provide an adequate curriculum for children in their school.
- PLAN is effective with slower, average, and bright students alike.
- Students achieve as well or better in PLAN than previously.

Teachers were largely undecided as to whether they were doing a better job of teaching or whether morale was better in PLAN this first year-- Come on, Administrators! --where's that pat on the back?!

In summary, although PLAN teachers would agree that PLAN teachers are very busy teachers, 83% of them feel that PLAN is worth the time and effort and 85% want PLAN to be continued in their school next year.

Part II The Diagnostic Look

PLAN as a Curricular Process

- Teachers feel that there is a need to modify existing TLU's and that teachers should develop new TLU's, particularly those of a remedial nature, to meet the needs of individual children in their classes. 75.2% of the teachers indicated a willingness to develop additional TLU's if given time and training.
- Teachers are largely divided in opinion as to whether PLAN tests or teachers should determine instructional levels and learning styles of children.

Effective Implementation of the PLAN System

The majority of teachers showed evidence of perceived effective implementation of PLAN in their schools.

- Students generally have a more positive attitude toward learning and have developed a better self-concept.
- Students enjoy the freedom afforded them and are generally able to handle this independence.
- Teachers recognize that for most effective implementation, para-professionals should receive the same PLAN training as teachers. They feel this training should be shared by PLAN consultants and teachers.

Ineffective Implementation--Being Informed

Teachers recognized some perceived evidence of limited effectiveness in implementation of the PLAN system largely centering around communication efforts with parents and in teacher training:

- Teachers basically feel that parents are not sufficiently well-informed about the goals and objectives of PLAN.

- Teachers are uncertain as to parents' attitudes toward PLAN.

- Teachers are uncertain as to whether parents like the present progress reporting system used with PLAN in their schools.

  (Note: A Parent Attitude scale is being developed by Dr. Wilson and will be field-tested this spring to provide more information.)

- Teachers feel more teacher-training in PLAN before starting the program or 6-8 weeks after the program began should have been provided.

Computer Services

Teachers largely support the computer services as a necessary part of the PLAN system and would like to have computer services expanded to provide more information.